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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,239	09/24/2003	Shigeyoshi Nagata	Q76635	2053

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WASHINGTON, DC 20037

EXAMINER

CHARLES, MARCUS

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/668,239	<b>Applicant(s)</b> NAGATA, SHIGEYOSHI	
	<b>Examiner</b> Marcus Charles	<b>Art Unit</b> 3682	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1-25-05 9-24-03</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is the first action relating to serial application number 10/668,239 filed 09-24-2003.

Claims 1-4 are currently pending.

#### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Drawings***

The examiner has accepted the drawing filed with this application as formal drawing.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nichols (3,316,771) in view of Dull et al. (2,056,602). Nichols discloses the claimed invention including each of the inside and outside flanks of the link is profiled by a circular shape of the same radius of curvature; and it is apparent that each of the teeth of the sprocket wheel is profiled by a circular shape of substantially the same radius as that of the inside and outside flanks. Nichols fails to disclose the individual center of the radius of curvature of the flanks is on the pitch line. Dull et al. (2,056,602) disclose a silent chain having links (A<sup>3</sup>) with inside and outside flanks having circular shaped profile of the same radius (0-b), (0-a) such that center (0) of each radius is on the pitch

line in order to allow a smooth transition during the engaging and disengaging between the sprocket and the chain link. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inner and outer flanks of the links of Nichols so the center of radii is located on the pitch line in view of Dull et al. in order to allow a smooth transition during the engaging and disengaging between the sprocket and the chain link.

In claim 2, Nichols discloses the claimed invention.

In claim 3, Nichols discloses the chain is composed of plastic it is apparent that the sprocket is composed of metal.

In claim 4, Nichols does not disclose the range of percentage of the sprocket wheel profile and the radius of curvature of the flanks. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Nichols and Dull et al. so that the radius of the sprocket wheel profile is within a manufacturing error of zero to 5% of the radius of curvature of each of the inside flank and the outside flank, since it has been held that where the general condition of the claims are disclosed in the prior art, discovering the optimum ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Avramidis (4,915,675), Horie et al. (6,533,691), Dull (1,598,906), Ledvina et al. (4,832,668 and 4,758,209), Cradduck (4,759,740) disclose a chain having links with inner flanks having a radius of curvature. Mott (5,464,374) discloses as link in

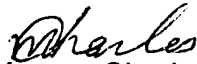
Art Unit: 3682

which the outer flank comprise a radius of curvature and Behning (1,693,431) discloses links having inside and outside flanks having radius of curvature.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on (571) 272-7099. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Marcus Charles  
Primary Examiner  
Art Unit 3682  
August 11, 2005